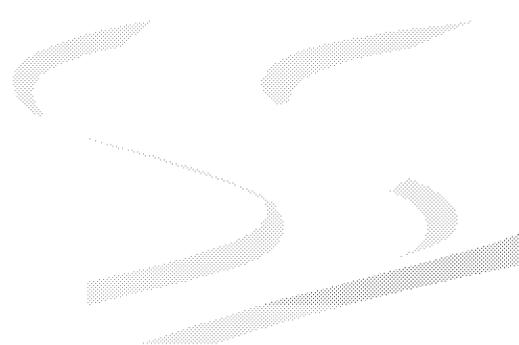


Proposed Remedy Selection for the Lower 8 Miles of the Lower Passaic River

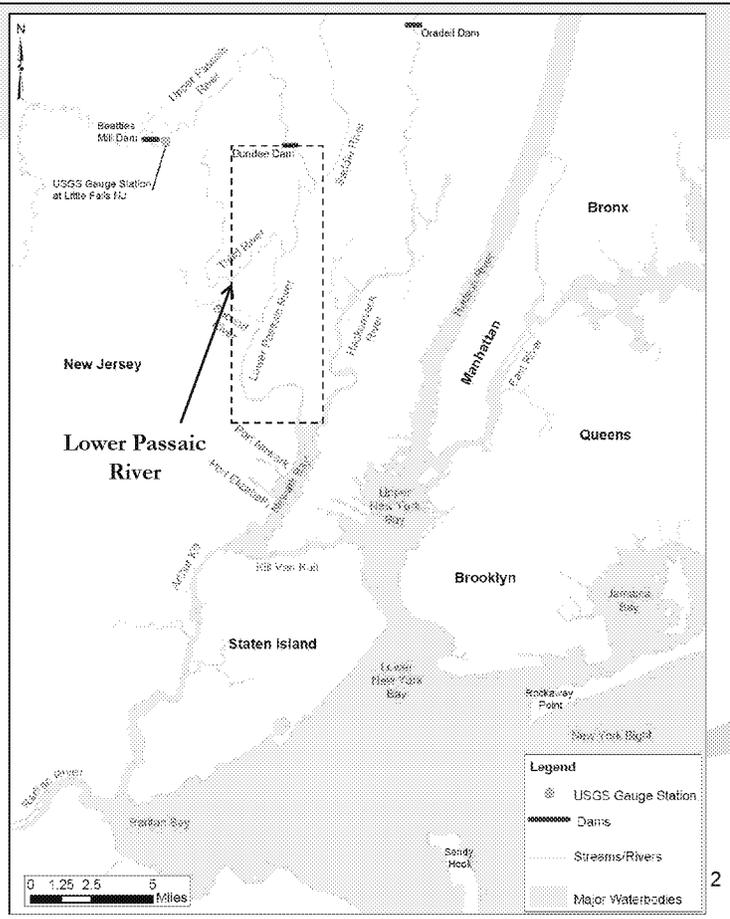
July 2015



Diamond Alkali Superfund Site includes Lower Passaic River and Newark Bay

Lower Passaic River:

- 17 Miles from Newark Bay to Dundee Dam
- Contaminated with >200 toxic chemicals, including dioxins, PCBs, mercury
- Phased cleanup approach



Phased Approach to Cleanup:

★ **Diamond Alkali Facility in Newark**
(primary source of dioxin; major cleanup completed 2001)

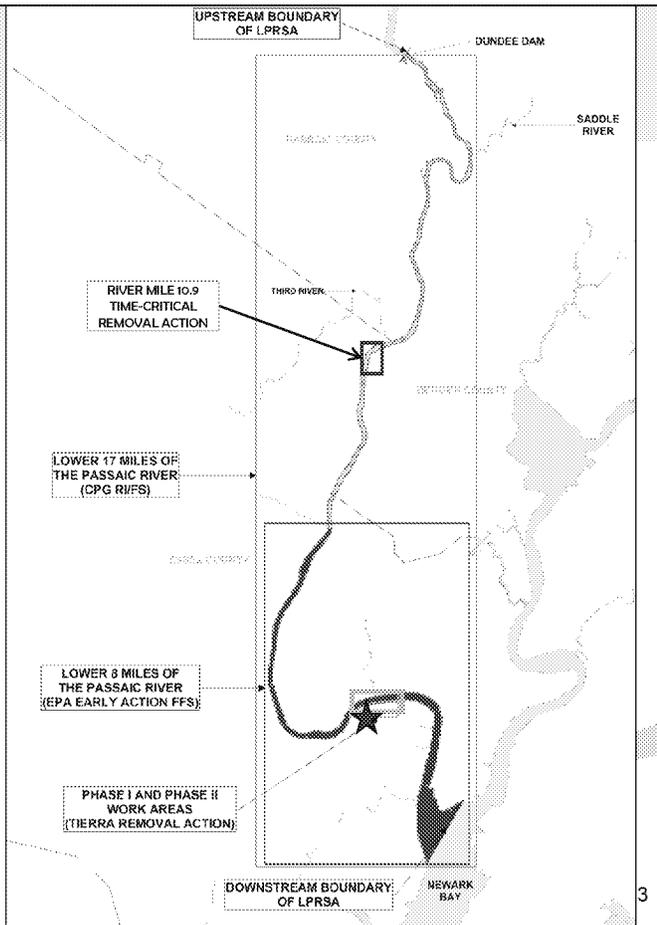
Green Box: Phase 1 Removal Action
(performed by PRP; dredged 40,000 CY of most heavily contaminated sediments; completed 2012)

Red Box: River Mile 10.9 Removal Action
(performed by PRPs; dredged 20,000 CY of contaminated sediments and capped mudflat; largely completed 2014; monitoring underway 2015)

Yellow Rectangle: 17-Mile Lower Passaic River Study Area (LPRSA) RI/FS (being performed by PRPs; completion expected 2016-17 followed by remedy selection process)

Magenta Rectangle: 8-Mile FFS
(performed by EPA; completed 2014; Proposed Plan issued 4/11/14; ROD expected 2015)

Newark Bay: RI/FS being performed by PRPs (completion expected 2018)



Site Timeline

- 1983: Removal actions start at Diamond Alkali Site in Newark
- 1984: Diamond Alkali Site added to EPA's Superfund list (NPL)
- 1987: EPA selects Interim Remedy for Site
- 1994: Occidental Chemical Corp. (PRP) starts 6-Mile river study; shows widespread contamination
- 2001: Interim Remedy for On Land portion of Site completed by Occidental
- 2004: EPA begins 17-Mile Remedial Investigation & Feasibility Study (RI/FS); shows most contamination is in lower 8 miles
- 2006: EPA begins 8-Mile Focused Feasibility Study (FFS)
- 2007: Cooperating Parties Group (CPG) assumes responsibility for 17-Mile RI/FS
- 2012: Occidental removes 40,000 cubic yards (CY) of most heavily contaminated sediment near Diamond Alkali facility
- 2013: CPG removes 20,000 CY contaminated sediment at RM 10.9

Site Timeline, Con't.

- April 11, 2014: EPA issues Focused Feasibility Study and Proposed Plan for cleanup of lower 8 Miles of Lower Passaic River
- Public comment period extended to August 20, 2014
 - 3 public meetings, plus 2 special informational sessions
 - Well over 1000 comments received
 - Widespread public support for EPA's Proposed Plan.
- 2015: Expected issuance of Record of Decision (ROD) with final cleanup plan
 - Also detailed response to all comments



Major Contaminants

- Dioxin
 - Likely human carcinogen
 - Reproductive problems
 - Developmental problems
 - Damage to immune and hormone systems
- Major Source
 - Former Diamond Alkali pesticide factory at 80 Lister Avenue, Newark
 - Manufactured Agent Orange during Viet Nam War
 - Dioxin a byproduct of the manufacturing process
 - Dioxin wastes deposited on land around factory, and discharged into Passaic River

Major Contaminants

■ PCBs

- Probable human carcinogen
- Learning & behavioral problems
- Damage to immune and hormone systems

■ Sources include:

- Coolants in electrical equipment (transformers, capacitors, etc.)
- Hydraulic fluids
- Paints, caulks, and other building materials

Major Contaminants

- **Mercury**
 - Developmental problems
 - Reproductive problems
 - Adverse effects on brain, nervous system, kidneys
- **Sources include:**
 - Coal combustion
 - Metal processing
 - Medical wastes

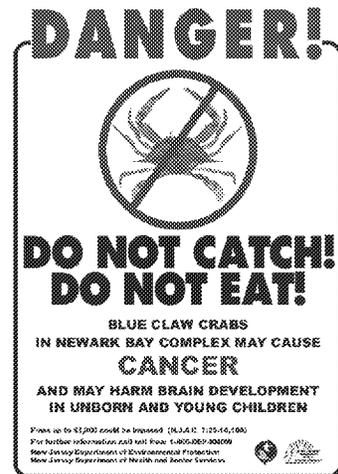
Why not let river “clean itself”?

- **People are eating highly contaminated fish and crab**

- Cancer Risk is 1000 times higher than EPA protective goal
- Non-Cancer hazard is almost 200 times higher than EPA protective goal.
- Also high risk to wildlife

- ***Data show little or no decline in contaminant concentrations over last 15 years ... the river is not cleaning itself.***

- Resuspension (scour into water column) of sediments in lower 8 miles is the major on-going source of contamination, especially during big storm events



April 2014 Proposed Plan for Lower 8 Miles

- **Bank-to-Bank Capping with Dredging:**
 - Engineered cap over lower 8 miles (w/maintenance)
 - 85% of contaminated surface sediment is in this stretch of the river
 - Dredge ~4.3 M cubic yards of contaminated fine sediments to:
 - Prevent additional flooding after cap is installed
 - Accommodate use of navigation channel in River Mile 0-2
- **Off-Site Disposal**
 - Dredged materials dewatered at local on-land processing facility
 - Transported by rail for disposal at permitted incinerators and disposal facilities

Why did EPA propose *bank-to-bank* remediation in lower 8 miles?

- 85% of contaminated surface sediment is in lower 8 miles
- Contamination in lower 8 miles is everywhere, bank-to-bank ... not concentrated in “hot spots”
- Bank-to-bank remediation of lower 8 miles is the only way to achieve required level of human health and ecological protection
- Bank-to-bank remediation of lower 8 miles will be consistent with any remedy that may be selected for full 17 miles in the future

Why did EPA propose off-site sediment disposal?

- State of NJ owns Newark Bay bottom
 - State will not agree to let EPA acquire part of Newark Bay bottom under Superfund law to build Confined Aquatic Disposal (CAD) site; State agreement required under Superfund.
 - "...CAD... is unacceptable to the State." --11/12/12 letter from NJ Gov. Christie to EPA Administrator Jackson
- Intense opposition to CAD from NOAA, US Fish & Wildlife, environmental groups, local citizens' groups and others
 - Concerns include unprecedented size of CAD site and high concentrations of dioxins/PCBs

Why did EPA propose additional dredging in lower 2 miles?

- To accommodate use of navigation channel in lower 2 miles closest to Newark Bay
- Rivers & Harbors Act requires navigation channel not be impeded unless channel is deauthorized or modified by Congress
- Army Corps of Engineers has documented that channel in lower 2 miles is and will remain in continued use, so is unlikely to request deauthorization by Congress
- Army Corps letter (2/6/14) states that current and future use are sufficient to justify maintenance dredging after remedy implementation, subject to funding

Why not await completion of 17-Mile Study?

- Final cleanup decision based on 17-mile study is several years away
- No need to delay work on lower 8 miles:
 - Lower 8 miles is major source of contamination
 - Only bank-to-bank meets cleanup goals
 - Consistent with any remedy that may be selected from 17-Mile study
- State of New Jersey and community have waited decades; expressed strong desire for work to proceed

EPA Review of Partial Cleanup Advocated by PRPs

- “Sustainable Remedy” suggested by Cooperating Parties Group is a limited hot spot cleanup
- Remediates fewer than 150 acres in lower 13 miles (about 15% of EPA’s proposed remedy in lower 8 miles)
- **Is even less protective than the targeted cleanup alternative evaluated by EPA as part of the FFS, which did not meet protectiveness goals.**
- ***Would not achieve EPA’s protectiveness goals, because:***
 - *limited areas of high contamination cannot be reliably identified, and*
 - *high contaminant levels left outside of small capped areas will not be reduced sufficiently by natural recovery.*

EPA Review of More Extensive Cleanup Advocated by Sierra Club NJ Chapter

- “Deep Dredging” alternative considered by EPA:
 - Remove all contaminated fine sediments in lower 8 miles (typically 10-15 foot deep)
 - Backfill with 2 feet of sand to address residuals
 - No maintenance required
- Not proposed for selection by EPA because:
 - Does not provide greater level of protectiveness compared to preferred alternative
 - Would take twice as long as preferred alternative
 - More than twice as much contaminated sediment to be managed compared to preferred alternative
 - Twice as expensive as preferred alternative
 - Implementability concerns

Schedule

- **April 11, 2014: Issued proposed cleanup plan**
 - Public comment period extended to August 20, 2014
 - Well over 1000 comments from PRPs, municipalities, public
- **2015: Issue Record of Decision for lower 8 miles**
- **Remedial Design for lower 8 miles: ~3+ years**
 - 17-mile RI/FS completion expected in 2016-17, long *before* completion of lower 8-mile design
 - Pertinent data from 17-mile RI/FS will be integrated into 8-mile design & implementation through Adaptive Management
- **Remedial Action for lower 8 miles: ~6 years (proposed remedy)**

Creating Jobs: Superfund Job Training Initiative

- As part of Phase 1 Removal Action, EPA and PRP implemented Superfund Job Training Initiative (JTI) in Newark
 - 2 weeks of training for unemployed area residents
 - 15 graduates of training program hired by site contractors for duration of Phase 1 Removal
- Proposed remedy for lower 8 miles could create hundreds of jobs for ~6 years
 - Hudson River PCB Site cleanup created 400-500 jobs
 - EPA will encourage use of Superfund JTI when construction begins



April 2014 News Conference Announcing Lower 8 Mile Proposed Plan

